REMARKS/ARGUMENTS

Reconsideration and withdrawal of the rejections of the application are respectfully requested in view of the above amendments and the following remarks.

I. STATUS OF THE CLAIMS AND FORMAL MATTERS

Claims 1 and 4-14 are pending in this application and have been rejected in the Office Action. In this response, new claim 15 has been added. No new subject matter is added as a result of the claim amendments.

It is submitted that these claims are patentably distinct from the prior art cited by the Examiner, and that these claims are in full compliance with the requirements of 35 U.S.C. §112. The remarks made herein are not made for the purpose of patentability within the meaning of 35 U.S.C. §§ 101, 102, 103 or 112, but rather the amendments and remarks made herein are simply for clarification and to round out the scope of protection to which Applicants are entitled.

Initially, the Examiner is thanked for withdrawing the finality of the previous Office Action and for accepting the revised declarations.

II. THE REJECTIONS UNDER 35 U.S.C. § 102(b) 35 U.S.C. § 103(a)

In numbered paragraph 4 of the Office Action, claims 1, 4, and 11 are rejected as allegedly being anticipated by U.S. Patent No. 3,178,050 to Doerpinghaus ("Doerpinghaus"). In paragraph 6 of the Office Action, claims 1 and 4-14 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 2,613,169 to Cunningham ("Cunningham") in view of Doerpinghaus. The rejections are traversed for at least the following reasons.

As recited in independent claim 1, the instant invention is directed to, inter alia, a:

<u>clamping mechanism</u> for closing said opening, said mechanism having a receiving portion in which said end is inserted between a ring portion having a radially extending member with a curved

engaging surface which extends radially outward and a ring receiving surface having a <u>corresponding geometry</u> to said ring portion wherein a clamping force is exerted by the clamping mechanism clamping said end between said ring portion and said ring receiving surface thereby affixing said mechanism to said end.

Doerpinghaus, either alone or in combination with Cunningham fails to teach, disclose or motivate a skilled artisan to practice a clamping mechanism comprising "a ring portion having a radially extending member with a <u>curved engaging surface</u> which extends radially outward and a ring receiving surface having a corresponding geometry to said ring portion."

The Office Action asserts that, as shown in Figures 7 and 8, Doerpinghaus teaches a ring portion 59 with a radially extending member having a curved engaging surface 82, and a ring receiving surface 58 with a surface of corresponding geometry to the ring portion being 81. The Examiner also asserts that surface 81 is complementary to surface 82. Office Action ¶ 4.

Applicants respectfully disagree. To correspond means to conform.¹ In the instant invention, ring portion 36 and ring receiving surface 48 are complementary surfaces having a corresponding geometry. That is, when the two surfaces of ring portion 36 and ring receiving surface 48 are brought into contact with each other, ring portion 36 conforms with or fits within the exterior surface of ring receiving surface 48. Said another way, when a flexible membrane is clamped into position between ring portion 36 and ring receiving surface 48, the clamping force exerted on the flexible membrane is distributed over the curved surfaces of ring portion 36 and ring receiving surface 48 in contact with the flexible membrane. The fact that the engaging surfaces are curved and have a corresponding geometry is significant in that the geometry of the surfaces impart a gentle transitional geometry that results in reduced stress concentrations in the

Webster's New WorldTM Collegiate Dictionary, Fourth Edition, 2004. A copy of which is included.

flexible membrane or fabric as well as results in less damage to the fabric, thereby increasing fabric durability. *See* page 8, lines 25-28.

In contrast, the curved engaging surface 82 of ring portion 59 (as characterized by the Examiner in the Office Action) and the curved engaging surface 81 of ring receiving surface 58 (as characterized by the Examiner in the Office Action), are not complementary and therefore do not have a corresponding geometry. That is, when engaging surfaces 81 and 82 are placed in contact with each other they do not conform with one another or fit one within the other as is the case with ring portion 36 and ring receiving surface 48 of the instant invention. Instead, only the high points on the corrugated walls 81 and 82 (engaging surfaces) are in contact with each other. In addition, forces acting on a fabric placed between engaging surfaces 81 and 82, will not be uniformly distributed over the engaging surfaces. Instead, the forces will be concentrated at the high points of the corrugated walls 81 and 82. Therefore, Doerpinghaus does not disclose engaging surfaces having a corresponding geometry.

In addition, paragraph 8 of the Office Action asserts that Doerpinghaus discloses a clamping mechanism made up of 58 and 59. Applicants respectfully disagree. Doerpinghaus fails to teach that the closure device includes a clamping mechanism that exerts a clamping force on the ring portion 59 and ring receiving surface 58 thereby clamping the end of the tubular structure between the two surfaces, affixing the clamping mechanism to the end of the tubular structure as required by claim 1 of the instant application.

As depicted in Figure 8 of Doerpinghaus, the flexible component C₄ attaches to the annular elements, 58 and 59, with the aid of a filler material 65. The flexible component C₄ and filler material 65, however, are not clamped in place. Instead, hard filler 65 is held in place by the corrugations in walls 81 and 82, of the upper portion of the annular space 64. Col. 9, lines

14-44. Although Figure 8 does show a clamping ring 63, this ring is not used to transmit a clamping force to the annular elements, 58 and 59, in order to clamp or lock the flexible component C₄ into position. Therefore, Doerpinghaus does not use a clamping mechanism to close an opening in the vessel.

Regarding Cunningham, the clamping mechanism in Cunningham differs from that of the instant invention. In the instant invention, clamping force on the fabric is provided by a clamping device that passes through the ring portion and ring receiving surface. In one embodiment, clamping force is provided by a nut 56 that is threaded down on a clamping screw 52. Page 8, lines 7-11. When the clamping screw 52 is tightened, a clamping force is generated on the fabric that is positioned between curved portion 44 of the ring portion 36 and beveled surface 48 of ring receiving surface 6, resulting in a seal between two sides of the fabric. Page 8, lines 16-17. When a clamping force is applied, however, the curved portion 44 and beveled surface 48 do not rotate with respect to one another. Instead, as the clamping screw 52 is tightened, the surfaces are brought closer to one another while remaining rotationally fixed. In additional embodiments, a clamping force can be generated by, but not limited to, a spring clamp with air or hydraulic release or an over-center locking device. Page 9, lines 1-4. In the instant invention, the clamping means or device and the ring portion and ring receiving surface are each separate devices or structures. Therefore, the curved portion 44 and beveled surface 48 do not rotate when a clamping force is applied. Since the surfaces in contact with the fabric do not rotate with respect to one another, regardless of the type of clamping device used, they will not abrade the fabric, which results in increased fabric durability.

The clamping mechanism in Cunningham, however, does not operate in a like manner. Instead, for a clamping force to be applied to a fabric, "[t]he nut 56 having wrench holes 57 is

engaged with the threaded post 54 and screwed down to clamp the parts firmly in place." Col. 11, lines 16-19. In this configuration, as depicted in Figure 7, the nut 56 provides the flat clamping surface in contact with the container material. The clamping device (nut 56) and the flat clamping surface are not separate. Instead, they are one structure. Therefore, as the nut 56 is tightened down, the nut surface in contact with the container material rotates or turns. This causes the flat surface of the nut 56 to contact the container material that is being clamped and possibly abrade it, which results in decreased fabric durability. As a result, the clamping device and the flat clamping surface do not remain rotationally fixed with respect to one another when a clamping force is applied

For at least the foregoing reasons, since Doerpinghaus, either alone or in combination with Cunningham, fails to teach each and every limitation of claim 1, Applicants respectfully submit that claim 1 patentably distinguishes over the relied upon portions of the cited references and is therefore allowable. Further, claims 4-15 that depend from claim 1 are allowable therewith.

Statements appearing above with respect to the disclosures in the cited references represent the present opinions of the Applicant's undersigned attorney and, in the event that the Examiner disagrees with any such opinions, it is respectfully requested that the Examiner specifically indicate those portions of the respective reference providing the basis for a contrary view.

CONCLUSION

In view of the foregoing, it is believed that all of the claims in this application are patentable over the prior art, and an early and favorable consideration thereof is solicited.

Please charge any fees incurred by reason of this response and not paid herewith to Deposit Account No. 50-0320.

Respectfully submitted,

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pora lu'tea (-a) [ModL, lit. ow tissue formed in the ovary as discharged its ovum; if the es the hormone progesterone preparation containing this rogesterone

pora stri-a'-ta (-ə) [ModL, lit riated ganglia in front of the

n 3 correspondence 4 corre-

rad'ing [< L corradere to radere, to scrape: see RATI to ning water, wind, glacial ice, ther debris —cor·ra'-sion (-ra'

e, ring < L currere, to run: see
ig or capturing horses, cattle,
'e area made by drawing up
circle —vt. -ralled', -ral'ling
al 2 to surround or capture
the form of a corral 4 [Slang]

< L correctus, pp. of corrigere < night, rule: see RECKON 1 to ight; remove errors from 2 to its of 3 to make conform to a to cause to rectify faults 5 to disease, etc.) -vl. to make t, disease, etc.) —vi. to make tment so as to compensate (for 1 conforming or ad per [correct behavior] 2 conte, right, or free from errors 3 amount, number, price, etc. --cor-rect'-ness n. -cor-rec'-

an absence of error (a correct ality [correct behavior]; accu-ire to obtain conformity with ife to obtain the system of the events is exact stresses or soom standard the exact suggests minute faccuracy of or overly fastidious attitude PUNISH ANT wrong false. lens used to correct spherical

rical mirror in certain optical

orrection < OFr correction < L corrected 2 a change that cor-t to right, or from abnormal to the amount of change made in ding to correct faults b) lusution within a prison system 5 al in the trend of prices in a n decline following, or in the —cor-rectional (-al) adj. id') n. [< CORRECT, after RECTI-

esp. in conduct; propriety rectif < LL correctious | tending edial -n. something corrective;

egri da) 1494?-1534; It. painter of the fall of Bataan; finally ender (May, 1942); recaptured

ack-form. < fol. | either of two lies the other —adj. closely and ing to be mutually related (b) mutual relation (with another polyselytics have been related to the second relation (with another polyselytics have been related to the second relation (with another polyselytics have been relative to the second relation (with another polyselytics have been relative to the second cal relation between; specif., to rdependent quantities, sets of the other)

n. [ML correlatio: see COM-6] or connection 2 the degree of a two sets of data (a correlation prelated —cor-re-la-tional add) any of several measures of con-

ML correlativus] 1 having a eciprocally dependent (correlation and expressing mutual relation and

used in pairs (In "neither Tom nor I can go," "neither" and "nor" are correlative conjunctions)—n. 1 a thing closely related to something else 2 a correlative word —cor-rel'a-tively adv. —cor-rel'a-

tiv'ity n. gy iy or iespond (kôr'ə spänd', kār'-) vi. [MFr. correspondre corresponder < L com., together + respondere, to RESPOND 1 to be in agreement (with something); conform (to something); tally; harmonize 2 to be similar, analogous, or equal, (to something) 3 to communicate (with someone) by exchanging letters, esp. regularly - SYN. AGREE — correspondingly adv.

ten 4 Math. a clearly defined relationship between two members of a set, or different sets, as one-to-one correspondence

of Bespondence school a school that gives courses of instruc-tion (correspondence courses) by mail, sending lessons and exami-nations to a student periodically, and correcting and grading the

corre-spond-ency (-span'dən sē) n., pl. -cles var. of CORRE-SPONDENCE (senses 1 & 2)

corre-spond-ent (-span'dent) adj. [ME < ML correspondens, prp. of correspondere, CORRESPOND corresponding; agreeing; matching; analogous;—n. 1 a thing that corresponds; correlate 2a) a person who exchanges letters with another b) a person who writes to a magazine or newspaper, expressing an opinion, as on public affairs magazine of newspaper, expressing an opinion, as on public affairs 3 a person hired by a newspaper, radio or television network, etc. to furnish news, articles, newscast segments, etc. of a certain type or from a distant place 4 a person or firm acting for, or having regular business relations with, another at a distance

corresponding angles Geom. a pair of nonadjacent angles, one interior and one exterior, on the same side of a transversal these paired angles are equal if the lines cut by the transversal are

cor-re-spon-sive (-span'siv) adj.

[Archaic] corresponding cor rida (kô rệ' thả; E kə rệd'ə) n. [Sp corrida (de toros), (bull-)baiting, lit., a running, race < fem. pp. of correr; to run < L currere: see CURRENT! a public program in which a series of bullfights, usually six; are held

cor ri-dor (kôr'ə dər, kar'-; -dôr')

corn-quiver a dar, Kar - - query, cornidor, runner < correre, to run < L corresponding angles corresponding angles

CORRESPONDING ANGLES

each pair of angles with the

same number is a pair of

corrie (kôr'e, kär'e) n. [< Gael coire, cauldron < IE base *kwer, pot > 0B. hwer, kettle! [Scot.] a round hollow in a hillside.

Corrie dale (kôr'e dâl', kär'.) n. [after Corriedale; New Zealand] a breed of rather large, white-faced sheep, developed in New Zealand for their wool and meat Cor-rien tes (kôr ryen tes) city in N Argentina, on the Parana River: pop. 258,000

cornigen dum (kôr's jen'dam, kär's) n., pl. -da (-da) [Li ger of corriger: see: CORRECT] 1 an error to be corrected sep. one in a printed work. 2 [pl.] a list of such errors with their corrections, inserted in the published work.

corrigible (kôr'ə jə bəl, kār'-) adj. [ME < OFr < ML corrigibilis < L corrigere: see CORRECT] capable of being corrected, improved, or reformed — cor. ri-gi-bil'-ity (-bil'ə tā) n. —cor'-ri-gi-biy adv.

corrival (ka ri'val) n., adj. [L corrivalis: see COM- & RIVAL] [Now corroborant (ke räb'e rent) adj. [L corroborans, prp. of corroborans; see fol.] 1 corroborating 2 [Obs.] strengthening: said of a medicine or tonic —n. [Obs.] a tonic — 1.

corroborate (ke rab) e rat') vt. -rat'ed, -rat ing [< L' corroborate; to strengthen < com., intens: + roborate; ipobur, strengthen see ROBUST] 1 [Obs.] to strengthen 2 to make more certain the validity of; confirm: bolster; support levidence to corroborate. his testimony] —SYN. CONFIRM —Corroborate.

(or robo rative (ke rab'e rativ, er a tiv) adj. corroborating or tending to corroborate; confirmatory: also corrobo at to ty (er a tending

cor. tobo ree (ke räb's re') n. [Austral dial < native korobra, dance] liadance festival held at night by Austral. Aborigines to celebrate tribal victories and similar events 2 in Australia, a) a large or noisy festivity b) an uproar; tumult Corrode (ks.rod) vi. -rod'ed, -rod'ing [ME corroden' < OFr corroden' | OFF cor 30.30 41.3 201

roded cor;rod ble adj. Corrosion (ke ro'zhen) n. [ME corrosioun < OFr corrosion < LL corrosion < Dr. of L'corrodere: see prec.] 1 a corroding or being corroded (Lia substance, as rust, formed by corroding

corrosive (ka ro'siv) adj. [OFr corrosif < ML corrosivus] 1 corroung or causing corrosion 2 bitingly sarcastic; cutting; acid—n. semething causing corrosion—corro'slvely adv.—corro'slvely adv.—corro'slvely

corrosive sublimate MERCURIC CHLORIDE

COTTU-gate (kôr'ə gāt', kār'-) vt., vl. --gat'ed, --gat'ing [<.L corrugatus, pp. of corrugare, to wrinkle | com-, intens. + riugare, to wrinkle | to shape or contract into parallel grooves and ridges; make wrinkles in; furcorrugated iron sheet iron

or steel, usually galvanized, corrugated to give it added CORRUGATED SURFACE strength in construction

corrugated paper paper or cardboard corrugated so as to be resilient, used for wrapping or packing corrugation (kôr e ga shan, kar-) n. [ML corrugation] 1 a corrugating or being corrugated 2 any of the parallel ridges or grooves of a corrugated surface

corrupt (ka rupt') adj. [ME < L corruptus, pp. of corrumpere, to destroy, spoil, bribe < com., together, + rumpere, to break: see RUPTURE] 1 [Obs.] changed from a sound condition to an unsound one; spoiled; contaminated; rotten 2 deteriorated from the normal one; sponed; contaminated; routen 2 determinated from the nor standard; specif., a) morally unsound or debased; perverted; evil; deprayed b) taking bribes; venal c) containing alterations, errors, or admixtures of foreignisms (said of texts, languages; etc.) —vt., vi. to make or become corrupt —5VN. DEBASE—corrupt'er.

or corrupt'tor —corrupt'ly adv.—corrupt'ness n.

or corrupt tible (be rup'ts bal) adj. [Me < LL(Ec) corruptibilis] that can be corrupted, esp. morally —corrupt bil'-ity (-ta bil's tê) n. —

corruption (ke rup shen) n. [ME corrupcion < OFr corruption corruption (so rup shan) h. [MD corruption or to ruption of corruption corruption (corruption) corruption the act or fact of making, becoming, or being corrupt 2 evil or wicked behavior; depravity 3 bribery or similar dishonest dealings 4 decay; putridity; rottenness 5 something corrupted, as an improperly altered word or text 6 [Rare] a corrupting influence

cor-rup-tion-ist (-ist) n. a person who engages in or upholds corrupt practices; esp. in public life

corrup-tive (ke rup'tiv) adj. [ME corruptif < LL(Ec) corruptivus] tending to corrupt or produce corruption — corrupt tively adv.

corrupt practices acts laws limiting contributions to and
expenditures in election campaigns, making illegal certain meth-

ods of influencing voters, etc.

CO' sage (kôr sāzh', -sāj') n. [[Fr < OFr cors: see CORPS & -AGE] 1

the bodice of a dress *2 a small bouquet for a woman to wear, as

the bodice of a dress "2 a small bounder so a small bounder so at the waist or shoulder cor-sair (kôr ser') n. [Fr corsaire < Prov corsar < It corsaro < ML cursarius, pirate, orig. swift < L cursus, COURSE]. 1 a privateer, esp. of Barbary 2 a pirate 3 a pirate ship

corse (kôrs) n. [Archaic] a dead body; corpse

Corse (kôrs) Fr. name for CORSICA Corse (kôrs) Fr. name for CORSICA

corse let (kôrs'lit; for 2, kôr'sə let!) n. [Fr.< OFr; dim: of corse see CORPS] 1. La piece of armor formerly worn to protect the trunk: also sp. cors let 2 a woman's undergarment combining a lightweight corset, usually without stays, or a girdle, and a bra: also sp., cor-se-

Cor-set (kôr'sit) n: [OFr, dim. of cors: see CORPS]. 1: a closefitting undergarment, often tightened with laces and reinforced with stays, worn, chiefly by women, to give support or a desired figure to the body from the hips to or including the breast, 2.a) a medieval, closefitting outer jacket; jerkin b) [Archaic] BODICE (sense 2) —vt.

corseting ower jacket, jermin of intrinsic Bounce, genselved.—Ve. to dress in, fit with, or enclose as in a corset.

cor-se-tiere (kôr'sə tir', -tyer') n. [Fr corsetiere, fem. of corsetier, corset, maker. < corset, prec. + -ier, -ER]. it a person who fits clients for the correct size and type of corset, bra, etc. 2 a manufacturer of or dealer, in foundation, garments, and the correct size and type of corset, bra, etc. 2 a manufacturer cor-setry (kôr'sə tre) n. 1 the work or trade of making, selling, or fitting corsets; girdles, etc. 2 corsets, girdles, etc.; collectively in the correct size of the c

Cor·si·ca (kôr'si ka) political unit of France, an island in the Mediterranean north of Sardinia: 3,351 sq mi (8,679 sq km), pop. 250,000; chief city, Ajaccio—Cor'si can adj. no. Cor.tá.zar (kôr tạ zăr'; Sp kôr tă'zər), Julio (hœ'lê 6) 1914-84; Argentine writer

cor tege or cor tège (kôr tezh', -tāzh') n' [[Fr cortège < It cortèg-gio, retinue < corte < L cohors: see COURT] 1 the group of attendants accompanying a person; retinue 2 a ceremonial procession, as ot a frineral

Cor tes (kôr tez'; Sp kôr tes) n. [Sp, pl of corte < L cohors: see

Cor. tes (kôr 'tez', Sp 'kôr 'tes) 'n [Sp, pl 'of corte ' L' cohôrs: see court the legislature of Spain.

Cor. tés (kôr 'tez', Sp kôr 'tes'), Her nan do (her nan do) 1485-1547; Sp. 'soldier & explorer: conqueror of Mexico: also sp. 'Cor 'tez': Her nan '(er nan') is sometimes used as a variant of Hernando 'Cor. tex (kôr 'teks') 'n, pl. -ti-ces' (te sêz') [L' bark of a tree: see CORIUM] 1 a) the outer part, or external layers of an internal organ, as of the kidney or the adrenal glands b) the outer layer of gray matter over most of the brain' 2 Bot 'a) a layer of tissue in the roots and stems of dicotyledonous plants, located between the stele and enidermis b) loosely any layer of stem tissue external to the and epidermis b) loosely, any layer of stem tissue external to the xylem c) an outer layer of tissue in certain algae, lichens, and fungi 3 Pharmacy the bark or rind of a plant

cor-ti-cal (kôr'ti kəl) adj. [ModL corticalis < L cortex (gen. corticis); bark of a tree 1 of a cortex 2 consisting of cortex 3 involving, or in some way caused by, the brain cortex --cor'ti cally adv.

See the inside front cover for pronunciation information and the symbolic is used to mark terms of American origin.